

## **ABSTRACT**

## A method for halftoning a multi-channel digital color image

having an x,y array of color pixel values, wherein at least two color channels are similar having substantially the same color but with low- and high-densities,

5 includes the steps of: providing a matrix of dither values for each group of similar color channels wherein two or more of the matrices of dither values are designed jointly to minimize a visual cost function; for at least one group of similar color channels, forming an inverted matrix of dither values by subtracting the value of each element of the matrix of dither values for that group from a predetermined maximum value, associating the inverted matrix of dither values with one of the low- or high-density color channels, and associating the matrix of dither values for that group with the other low- or high-density color channel of that group; for each color channel of the multi-channel digital color image modularly addressing the matrix of dither values associated with that color channel using the location of a pixel in the digital color image to obtain an addressed dither value; using the addressed dither value for each color channel, together with the pixel value for the corresponding color channel, to determine an output halftone image value for each color channel.